

REMARKS

Claims 1-8, 10, 11, 13, 14 and 16 are currently pending in the application. Claims 9, 12 and 15 are hereby cancelled, without prejudice or disclaimer. By this amendment, claims 1, 11, and 14 are amended. Support for the amendment(s) is provided in at least Figures 2 and 3 and at least at page 7, lines 20-23 and page 8, lines 2-11 of the present specification. No new matter is added. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

Prior Art Rejections

Claims 1-6, 11, 12, 14, and 15 were rejected under 35 U.S.C. §102(b) for being anticipated by U. S. Patent No. 5,850,211 issued to Tognazzini. ("Tognazzini"). Claims 7, 8, and 10 were rejected under 35 U.S.C. §103(a) for being unpatentable over U. S. Patent No. 5,850,211 issued to Tognazzini. ("Tognazzini") in view of U. S. Patent No. 6,351,273 issued to Lemelson. ("Lemelson"). Further, claims 9, 13, and 16, were rejected under 35 U.S.C. §103(a) for being unpatentable over Tognazzini. in view of U. S. Patent No. 5,867,158 issued to Murasaki, *et al.* ("Murasaki"). These rejections are respectfully traversed.

"For anticipation of a claim under 35 U.S.C. § 102, a single prior art reference must contain each and every limitation of the claim, either expressly or under the doctrine of inherency. Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1570 (Fed. Circ), cert. denied, 488 U.S. 892 (1988)."

The invention is directed to using eye gaze information from an eye gaze tracking system to continuously control the rate and direction of scrollable information presentation on a display in a natural manner. An eye tracking device is used to determine the area on a display that a user is looking. A control is provided for adjusting a speed of the scrolling information if the gaze position deviates from an anchor position which may be defined near a center line on the display.

The control also provides for reversing the direction of the scrolling when the gaze position nears a side of the display. This gaze position may be along any point along a line near the side of the display, and is not a single fixed position. This provides advantages of controlling the direction of the scrolling without having to gaze at a fixed location, and, flexibly allows gazing along the entire length of the line near the side of the display to control scroll direction. The invention also provides the advantage of dynamically changing the anchor location to the position of the eye gaze. This provides for a position where the user is comfortable reading and becomes a point from which changes in scroll rates may be computed. Thus, the system and method of the invention is very flexible, and allows ease of design regardless of the user and initial anchor position.

Tognazzini, on the other hand, only allows for reversal of the screen scroll direction when the user looks at one specific location. That is, scrolling and paging in Tognazzini is controlled by looking at specific pre-determined locations (e.g., Figure 4, items 420, 430; Fig. 5, items 510, 515, 520, and 530; and Fig. 9, step 930). However, Tognazzini does not teach or suggest reversing direction of scrolling when the gaze position nears a line of the display, and more particularly, along any position of the line. Tognazzini cannot even provide such features because other icons are present along the top/bottom of the screen which provides other functions such as next page button and previous page button and scroll up and scroll down buttons (Figs. 4 and 5). Thus, Tognazzini cannot ever be modified to teach the claimed invention.

Also, Tognazzini does not teach dynamically changing the anchor point as admitted by the Examiner. Tognazzini also does not teach an anchor position as a horizontal line, as correctly noted by the Examiner. The Examiner also agrees that Tognazzini does not show adjusting the reference, i.e., anchor position. However, the Examiner is of the opinion that Muraski and shows dynamically adjusting the anchor point. Applicants disagree with the Examiner that Murasaki teaches dynamically adjusting the reference position and Applicants also disagree with the Examiner that designating a displayed screen area in Tognazzini is equivalent to re-assigning a reference position.

The Examiner cites col. 11, lines 25-28 in Murasaki to demonstrate that Murasaki dynamically adjusts the reference point. However, this disclosure simply states that the reference point may be changed. The manner which Murasaki changes coordinates is via the coordinate inputting apparatus 13, which is a mechanical input device which a user must manually operate (see, col. 14, ll. 27-43). This is clearly not “dynamically adjusting the reference point” as required by claims 1, 13 and 16.

Further, the Examiner asserts that it would be obvious to combine the references of Tognazzini and Murasaki because “Tognazzini teaches that a user may designate displayed screen areas with his or her gaze (for example, see col. 6, lines 44-58), it is [then] understood that the user may designate the reference position with his or her gaze.” However, Applicant disagrees that Tognazzini teaches or suggests that the reference position may be changed with a gaze. There is, in fact, no such teaching in Tognazzini. Tognazzini teaches is that certain pre-defined areas (e.g., 520 and 530) may be gazed at to change pages (for example). This is not the same as re-defining a reference position, and, accordingly, it would not be obvious to combine the references, as suggested by the Examiner, since Tognazzini does not teach the concepts as suggested by the Examiner.

In contrast, in the invention, a reference position may be re-assigned positionally on the display (e.g., to effect different display rate changes while permitting a comfortable reading location (see page 7, ll. 20 to page 8, line 1, and page 8, line 29 to page 9, line 2) which includes a reassignment of a control location (e.g., anchor point). This is not the same as simply selecting pre-defined locations to cause a selection as taught by Tognazzini. The invention permits dynamic adjusting of the anchor point anywhere on the display. The invention teaches these concepts at least at page 7, line 20-23 and page 8, line 29 to page 9, line 2, where it discloses, respectively:

“As a variation, this rate adjustment mechanism need not be anchored to the center of the window 34. The anchor location can dynamically adjust itself to the position of eye gaze dwell.”

“As shown in Figure 2, the anchor point can be any point where the user is comfortable reading but for illustration purposes is initially set to be the horizontal line in the vertical center 34 of the display.”

This is not simply selecting a pre-defined limited choice as taught by Tognazzini. Therefore, since Tognazzini, Murasaki, and Lemelson, either singly or in combination, do not teach all the features of the claimed invention, Applicants submit that all the features of the claimed invention is not taught by the references, either singly or in combination, and that a *prima facie* case of obviousness therefore has not been demonstrated.

Subsequently, Applicants submit that the rejections of claims 1-6, 11, 12, 14, and 15 under 35 U.S.C. §102(b) and the rejection of claims 7, 8, 9, 10, 13 and 16 under 35 U.S.C. §103(a) be withdrawn.

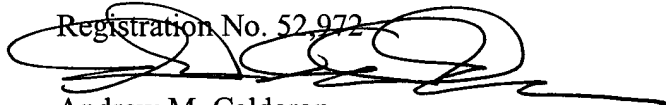
CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicant hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to IBM Deposit Account No. 50-0510.

Respectfully submitted,

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